

Application Serial No. 09/901,121
Amendment dated March 8, 2004 (Monday)
Reply to Office action of October 6, 2003

REMARKS

Claims 38 through 58, 61, 64, 65, 66, 68, and 69 are pending in this application. Claims 38, 39, 42, 43, 44, 47, 48, 53 through 57, 64, 66, and 68 are amended herein. Claims 59, 60, 62, 63, and 67 are cancelled herein. Support for the amendments to the claims may be found in the claims as filed originally. Reconsideration of this application in view of the foregoing amendments and the following remarks is respectfully requested.

Drawings:

A Petition to Accept Color Photographs was filed concurrently with the application on July 10, 2001. A copy of the petition is included for the Examiner's convenience. It is believed that the conditions for accepting color drawings have been satisfied. If one or more conditions remains unsatisfied, the courtesy of a telephone call to the undersigned representative of the Applicant is requested respectfully.

Objections to the Claims:

Claims 41 and 66 were objected to for failing to further limit the subject matter of the previous claim. Claim 38 has been amended to remove the reference to a solid phase. Claim 66 has been amended to depend from claim 38. Withdrawal of the objection is earnestly solicited.

Claim Rejections - 35 U.S.C. § 112:

Claims 38 through 69 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. Claims 38, 39, 42, 43, 44, 47, 48, 53 through 57, 64, 66, and 68 have been amended to make them more definite. In particular, commas have been added to claim 38, and the division into parts a and b has been removed. Claim 38 has also been amended to remove the recitation "solid phase", and claim 66 has been amended to depend from claim 38, as discussed above. For the record, there is nothing incompatible about a continuous signal and a pulsed signal. A pulsed signal can be continuous, and vice versa. It's not like the transmitter has to be turned off between the pulses, after all. The amplitude of the signal has to merely be brought low. Withdrawal of the rejection is earnestly solicited.

Claim Rejections - 35 U.S.C. § 112:

Claims 38, 39, 41, 45, 54-57, and 69 were rejected under 35 U.S.C. § 112, first

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paragraph, as containing subject matter which is not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification has been amended to comport the specification to claims 50, 52, 64, and 65 as filed originally.

With respect to the importance of multiple heads and multiple intensities, 35 U.S.C. § 112, first paragraph includes no requirement to explain why a limitation is necessary to use an invention, but rather only how to make and use an invention. Furthermore, the presence of the various limitations implies their necessity. Finally, it is submitted that the reasons for using multiple transducers and variable frequencies and intensities is described in the Summary at page 10, lines 14-16 and 21-30, continuing at page 11, lines 1-3, of the specification as originally filed. Withdrawal of the rejection is earnestly solicited.

Claim Rejections - 35 U.S.C. § 102:

Claims 38, 39, 40, 43, 45-48, 56, and 58-64 were rejected under 35 U.S.C. § 102(b) as anticipated by Lanza et al., US 5,958,371. The rejection is traversed.

Claim 38 recites:

"A method of performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA, wherein said method comprises using ultrasound at a frequency of at least 100 kHz."

Lanza neither teaches, discloses, nor suggests a method of performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA using ultrasound at any frequency, let alone a frequency of at least 100 kHz. Lanza makes no mention at all of performing hybridization on nitrocellulose membranes using ultrasound at column 7, lines 35-64, contrary to the assertion in the Office action. Rather, Lanza uses ultrasound for *detecting* any molecular epitope or receptor . . . without the need for use of ionizing radiation with or without associated invasive procedures, as described at column 7, lines 43 through 45.

Furthermore, Lanza describes ultrasound-based ELISA-type laboratory diagnostic assays in liquid and solid phase systems at column 7, lines 53-55, not performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA *itself*, as recited in

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claim 38. Lanza is concerned with ultrasonic imaging, drug or chemotherapeutic agent delivery, and diagnostic assays and detection systems, as described at column 1, lines 16-18, not performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA itself, as recited in claim 38. Furthermore, Lanza's goal is adapting ligand-based binding systems to an ultrasonic contrast system, as described at column 2, lines 31 and 32, not performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA itself, as recited in claim 38. Finally, Lanza describes a method for enhancing reflectivity at column 4, line 60, not a method of performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA, as recited in claim 38. Claim 38 is submitted to be allowable. Withdrawal of the rejection of claim 38 is earnestly solicited.

Claims 39, 40, 43, 45 through 48, 56, and 58, 61, 63, and 64 depend from claim 38 and add further distinguishing elements. Claims 39, 40, 43, 45 through 48, 56, and 58, 61, 63, and 64 are also submitted to be allowable. Withdrawal of the rejection of claims 39, 40, 43, 45 through 48, 56, and 58, 61, 63, and 64 is earnestly solicited.

Claim Rejections - 35 U.S.C. § 103:

Claims 41, 42, 44, 46, 47, 48, 49, 51, 53, 54, 55, 57, and 69 were rejected under 35 U.S.C. § 103 as being unpatentable over various combinations of Lanza and Gravlee, Jr. US 3,961,097, Blank et al., US 5,913,826, Lang et al., US 5,941,825 and Kretz, US 4,403,509. The rejection is traversed. Reconsideration is earnestly solicited.

Claims 41, 42, 44, 46, 47, 48, 49, 51, 53, 54, 55, 57, and 69 depend from claim 38 and add further distinguishing elements. None of the cited references describe performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA itself, as recited in claim 38. Since none of the cited references describe performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA separately, their combination cannot, either.

With respect to the combination of Lanza and Gravlee, even if it were obvious to

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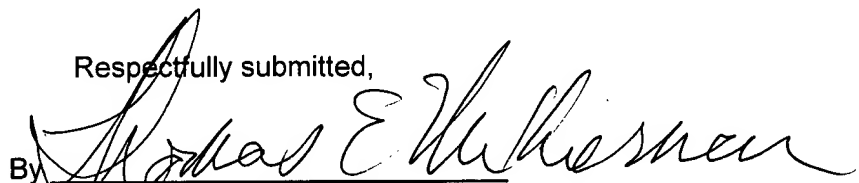
discover the optimum workable range of the methods disclosed by Lanza, as asserted in the Office action at page 10, there is still no basis for a conclusion that it would be obvious to discover the optimum workable range of a method of performing immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA itself, as recited in claim 38. The assertion at page 10 is therefore submitted to be a non sequitur. Claims 41, 42, 44, 46, 47, 48, 49, 51, 53, 54, 55, 57, and 69 are also submitted to be allowable. Withdrawal of the rejection of claims 41, 42, 44, 46, 47, 48, 49, 51, 53, 54, 55, 57, and 69 is earnestly solicited.

Conclusion:

Accordingly, in view of the reasons given above, it is submitted that all claims 38 through 58, 61, 64, 65, 66, 68, and 69 are allowable over the cited references. Allowance of all claims 38 through 58, 61, 64, 65, 66, 68, and 69 and of this entire application are therefore respectfully requested.

Respectfully submitted,

By



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